Vulnerability and Play: Exploring the Mundane Ways in Which Games Might Harm Players

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ABSTRACT

The games research community strongly focuses on games as a medium that benefits players, and predominantly views negative effects through the lens of permanent vulnerability. In this paper, we argue that this is a narrow perspective which no longer aligns with how policy makers and other fields view the construct, and limits our research community in how we understand the potential harms of play: First, We deconstruct vulnerability and question who is vulnerable in which context, and then we explore the relationship between vulnerability, game design, and mundane types of harm. We conclude with challenges and opportunities for our community.

CCS CONCEPTS

• **Applied computing** → **Computer games**; • **Human-centered computing** → *Human computer interaction (HCI)*.

KEYWORDS

vulnerability; harm; digital games; game design

1 DECONSTRUCTING VULNERABILITY AND ITS ROLE IN GAMES

The term vulnerability is defined as "capable of being physically or emotionally wounded" [5]. Most commonly, it is associated with trait vulnerability, adopting an individualized and medicalized perspective [7]. However, there also are other perspectives on vulnerability in which a person's context is prioritized, such as in law enforcement [6], and there have been attempts to categorize vulnerability as physical, emotional, cognitive [3], as well as the differentiation between a situational vulnerability and a trait vulnerability [12].

With respect to vulnerability in the context of digital technology, the HCI community typically operationalizes it as a trait, e.g., [26].

Particularly in the context of games, a similar view is adopted, e.g., associating vulnerability with age [2]. This is also reflected in policy: For children, legal and regulatory bodies have put several preventive measures in place, such as the Convention for the Rights of Children (CRC) [24] or Children's Online Privacy Protection Rule (COPPA), or paid special attention to children, e.g., in the California Consumer Privacy Act, and the Digital Service Act. On the practical side, UNICEF and Lego provide guidelines for "Responsible Innovation in Technology for Children" to reduce the risk of potential harm through design practices [14].

However, game design can also be challenging from a wider perspective, for example, when viewed through the lens of behavioural design [2] and deceptive patterns [27], and when considering the commercial interest of different stakeholders.

Here, design decisions that do not prioritize the player are typically discussed in the context of the consequences of trait vulnerability, e.g., addiction [11], or financial loss [25].

Recent work highlights how such issues may also expand to the average player. For example, Petrovskaya et al. [17] on microtransactions highlighted that players widely view monetization-driven design as detrimental to their experience. Likewise, policymakers recently began to broaden the term of vulnerability with respect to digital products. For example, the EU introduced [28] the vulnerable customer, who is characterized as being powerless, having no control over the interactions on the market, and being at higher risk of experiencing harm. Considering the complexity of games and their extensive effects on players, we invite our community to reflect upon *everyday vulnerability* and harm in the context of play more broadly.

2 THE INTERPLAY BETWEEN MUNDANE HARMS AND EVERYDAY VULNERABILITY

Instead of focusing on big harms and permanently vulnerable populations, we want to explore whether games also have potential to expose vulnerability in a more mundane fashion.

2.1 Example 1: Meaningless Play & the Risk of Shallow Experience

The HCI and games research community is invested in the idea of meaningful play [20], and that games benefit players through satisfaction of basic psychological needs (see [18] and [22]). While there is empirical evidence that supports this notion (e.g., [19] and [16]), we argue that our research community must pay closer attention to the relationship between the design of the artifact and its ability to satisfy player needs, opening up to the idea that games can also leave these unfulfilled [1]. For example, Paw Patrol: On a Roll [9] is a platformer game that addresses children at preschool

age. While the game does not exploit children's stage of cognitive development, gameplay is extremely repetitive, does not enable choice beyond the core mechanic, and offers little room for player progression or mastery. We hypothesize that the game has potential to harm children by occupying the time that they (or their parents) allocated to digital play with low-quality content that is unlikely to enable them to reap the benefits of play that our research community continues to highlight. We also want to be clear that this risk does not only affect children: shallow game design can threaten meaningful play among people of all ages.

2.2 Example 2: Sparking Toxicity by Not Buying Cosmetic Items

Over the last decades, the HCI community has been investigating the benefits of social play [23]. As shown by prior work, digital games provide many social benefits and ways to satisfy social needs [13]. However, game developers and games researchers are challenged by negative social behaviors online summarized within the term of "toxicity" [8]. For example, in the game Fortnite [21] players can spend money to buy cosmetics for their avatar without gaining an advantage, but also unlock less fancy cosmetics through play progress in the actual game. Although not affecting any aspects of the actual game except the aesthetics, players with "lower quality" avatars reported that they experienced severe harassment in the game, ranging from insults up to exclusions from rounds because other payers valued them as "not good enough" [15]. Furthermore, players reported that they felt "poor" when they had to stick with freely available customization [4]. These incidents show that game mechanics may cause harm by mirroring mechanisms that are known to lead to social exclusion in the real world.

3 CHALLENGES AND FUTURE DIRECTIONS FOR HCI AND GAMES RESEARCH

Our work highlights the responsibility of our research community to consider player vulnerability beyond narrow definitions, and to develop a more nuanced perspective on the mundane harms of digital play. In this context, we see two main points for reflection:

(1) Understanding Mundane Harms and Vulnerability as a Common Property of the Artifact (Rather Than a Characteristic of the Player). Previous work has predominantly viewed harm induced by games as a result of individual characteristics of players, or of specific design patterns. We argue that vulnerability needs to be viewed as situational, and that harm can also be induced by the interplay of game mechanics not commonly viewed as problematic patterns. Here, there is an opportunity for our research community to develop the frameworks and tools to support analysis of games to better understand these instances. However, most of the current discussion about these topics evolve around the idea that the vulnerability of the player is essential to understand that also technology can develop and manifest vulnerabilities beyond security issues. Prior work suggests several harmful design patterns and practices (e.g., [10, 27]]) demonstrate the instances in which we can clearly identify and label harmful design practices. However we suggest that our community may go beyond the current perspective on vulnerability and harm to better understand how to create save and enjoyable digital spaces for their audiences.

(2) Developing Research Approaches That Consider Mundane Harms and Everyday Vulnerability. Looking back at the introduced example the question rises how to assess mundane harms and everyday vulnerabilities. Currently, our community may not have the adequate tools to properly access these phenomena. Therefore, we suggest that further long-term studies in off-the shelf games as well as gaming-related phenomena such as video game streaming and communication platforms to better explore the social constructs forming within the gaming community will help to better understand when playful design aspects may turn into potential harms which exploit player's vulnerabilities. Furthermore, revisiting existing definitions of the term vulnerability in adjunct research areas beyond the medicalized perspective will help to sharpen our understanding about vulnerability in the context of digital games. Additionally, we need to further investigate the risks factors forming out of games to inform the development of better tools and measurements of these constructs.

4 CONCLUSION

Our work suggests a wider definition of vulnerability in the context of play, and adds nuance to the kinds of harm caused by games. Reflecting on our work, we encourage our community to adopt a perspective on games that views them as artifacts that produce both positive and negative consequences, allowing us to take responsibility for our designs and research directions. These suggestions and reflections open up the opportunity for the HCI and games research community to engage in technology assessment, allowing us to develop a more comprehensive understanding of how games affect players, and the moments in which they can harm rather than benefit players.

REFERENCES

[1] Nick Ballou and Sebastian Deterding. 2022. 'I Just Wanted to Get it Over and Done With': A Grounded Theory of Psychological Need Frustration in Video Games. (2022).

[2] Max V. Birk, Simone Van Der Hof, Celia Hodent, Kathrin Gerling, and Antonius J. Van Rooij. 2023. Behavioural Design in Video Games: Ethical, Legal, and Health Impact on Players. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems* (Hamburg, Germany) *(CHI EA '23)*. Association for Computing Machinery, New York, NY, USA, Article 331, 4 pages. https://doi.org/10.1145/3544549.3573801

[3] Joachim Boldt. 2019. The concept of vulnerability in medical ethics and philosophy. *Philosophy, Ethics, and Humanities in Medicine* 14, 1 (11 Apr 2019), 6. https://doi.org/10.1186/s13010-019-0075-6

[4] Charlie Wood. 2019. Kids who play Fortnite say they get bullied and shamed if they can't afford paid skins, according to a damning report on gaming habits.

[5] Meriam Webster Dictionary. 2023. Definition of "Vunlerability. https://www.merriam-webster.com/dictionary/vulnerable Accessed on 06 22, 2023.

[6] Iniobong Enang, Jennifer Murray, Nadine Dougall, Andrew Wooff, Inga Heyman, and Elizabeth Aston. 2019. Defining and assessing vulnerability within law enforcement and public health organisations: a scoping review. *Health & Justice* 7, 1 (01 Mar 2019), 2. https://doi.org/10.1186/s40352-019-0083-z

[7] Office for Health Improvement & Disparities; United Kingdom. 2022. Vulnerabilities: applying All Our Health. https://www.gov.uk/government/publications/vulnerabilities-applying-all-our-health/vulnerabilities-applying-all-our-health Accessed on 06 22, 2023.

[8] Julian Frommel, Daniel Johnson, and Regan L. Mandryk. 2023. How perceived toxicity of gaming communities is associated with social capital, satisfaction of relatedness, and loneliness. *Computers in Human Behavior Reports* 10 (2023), 100302. https://doi.org/10.1016/j.chbr.2023.100302

[9] Outright Games. 2019. Paw Patrol on a roll. https://outrightgames.com/games/paw-patrol-on-a-roll/ Accessed on 06 22, 2023.

[10] Daniel King, Paul Delfabbro, and Mark Griffiths. 2010. Video game structural characteristics: A new psychological taxonomy. *International journal of mental health and addiction* 8 (2010), 90–106.

[11] Daniel Loton, Erika Borkoles, Dan Lubman, and Remco Polman. 2016. Video game addiction, engagement and symptoms of stress, depression and anxiety: The mediating role of coping. *International Journal of Mental Health and Addiction* 14 (2016), 565–578.

[12] Catriona Mackenzie, Wendy Rogers, and Susan Dodds. 2013. Introduction: What Is Vulnerability, and Why Does It Matter for Moral Theory? In *Vulnerability: New Essays in Ethics and Feminist Philosophy*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199316649.003.0001 arXiv:https://academic.oup.com/book/0/chapter/141004987/chapter-ag-pdf/45242126/book_1543_section_141004987.ag.pdf

[13] Regan L Mandryk, Julian Frommel, Ashley Armstrong, and Daniel Johnson. 2020. How passion for playing World of Warcraft predicts in-game social capital, loneliness, and wellbeing. *Frontiers in psychology* 11 (2020), 2165.

[14] UNICEF Office of Research. 2022. Responsible Innovation in Technology for Children. In *Innocenti, Florence*.

[15] Patricia Hernandez. 2018. Fortnite is free, but kids are getting bullied into spending money.

[16] Wei Peng, Jih-Hsuan Lin, Karin A. Pfeiffer, and Brian Winn. 2012. Need Satisfaction Supportive Game Features as Motivational Determinants: An Experimental Study of a Self-Determination Theory Guided Exergame. *Media Psychology* 15, 2 (2012), 175–196. https://doi.org/10.1080/15213269.2012.673850 arXiv:https://doi.org/10.1080/15213269.2012.673850

[17] Elena Petrovskaya, Sebastian Deterding, and David I Zendle. 2022. Prevalence and Salience of Problematic Microtransactions in Top-Grossing Mobile and PC Games: A Content Analysis of User Reviews. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* (New Orleans, LA, USA) *(CHI '22)*. Association for Computing Machinery, New York, NY, USA, Article 560, 12 pages. https://doi.org/10.1145/3491102.3502056

[18] Richard M. Ryan, C. Scott Rigby, and Andrew Przybylski. 2006. The Motivational Pull of Video Games: A Self-Determination Theory Approach. *Motivation and Emotion* 30, 4 (01 Dec 2006), 344–360. https://doi.org/10.1007/s11031-006-9051-8

[19] Michael Sailer, Jan Ulrich Hense, Sarah Katharina Mayr, and Heinz Mandl. 2017. How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior* 69 (2017), 371–380. https://doi.org/10.1016/j.chb.2016.12.033

[20] Katie Salen and Eric Zimmerman. 2005. Game design and meaningful play. *Handbook of computer game studies* 59 (2005), 79.

[21] Epic Games Studio. 2017. Fortnite. https://www.fortnite.com/ Accessed on 06 22, 2023.

[22] April Tyack and Elisa D. Mekler. 2020. Self-Determination Theory in HCI Games Research: Current Uses and Open Questions. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (Honolulu, HI, USA) *(CHI '20)*. Association for Computing Machinery, New York, NY, USA, 1–22. https://doi.org/10.1145/3313831.3376723

[23] April Tyack, Peta Wyeth, and Daniel Johnson. 2020. Restorative Play: Videogames Improve Player Wellbeing After a Need-Frustrating Event. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (Honolulu, HI, USA) *(CHI '20)*. Association for Computing Machinery, New York, NY, USA, 1–15. https://doi.org/10.1145/3313831.3376332

[24] Unicef et al. 1989. Convention on the Rights of the Child. (1989).

[25] Simone Van der Hof, Stijn Van Hilten, Sanne Ouburg, Max V Birk, and Antonius J Van Rooij. 2022. "Don't Gamble With Children's Rights"—How Behavioral Design Impacts the Right of Children to a Playful and Healthy Game Environment. *Frontiers in digital health* 4 (2022).

[26] Jenny Waycott, Greg Wadley, Stefan Schutt, Arthur Stabolidis, and Reeva Lederman. 2015. The Challenge of Technology Research in Sensitive Settings: Case Studies in 'Ensitive HCI'. In *Proceedings of the Annual Meeting of the Australian Special Interest Group for Computer Human Interaction* (Parkville, VIC, Australia) *(OzCHI '15)*. Association for Computing Machinery, New York, NY, USA, 240–249. https://doi.org/10.1145/2838739.2838773

[27] José P Zagal, Staffan Björk, and Chris Lewis. 2013. Dark patterns in the design of games. In *Foundations of Digital Games 2013*.

[28] Nikolina Šajn. 2021. Vulnerable consumers. https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690619/EPRS_BRI(2021)690619_EN.pdf Accessed on 6 22, 2023.